PROGRAMMABLE LOGIC CONTROLLER

Product Catalog

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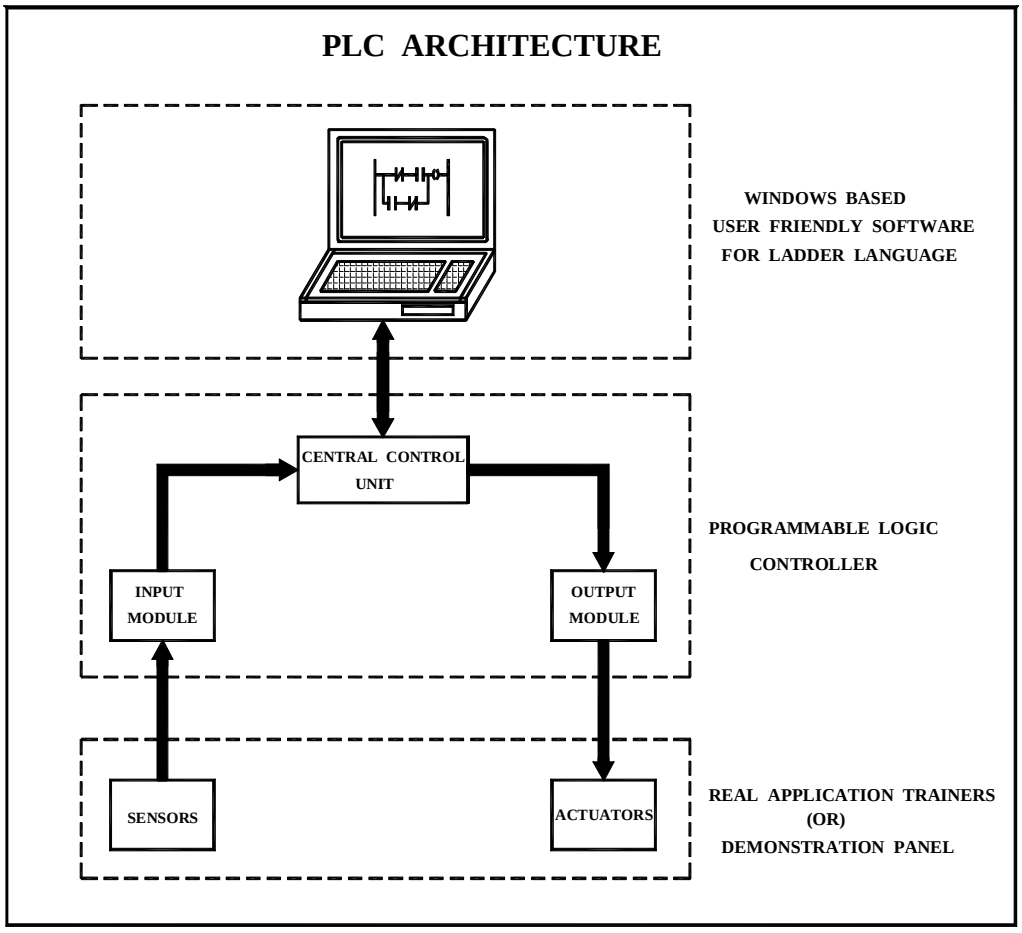
INTRODUCTION

PLC trainer consists of a PLC, Demonstration panel and programming software to develop the program in ladder language, so that students can study the programming techniques, different control functions, Real time applications and implementation of logical approaches that causes conveniently replace small and medium wiring systems. PLC hardware consists of CPU, input & output module.

Demonstration panel consists of SPDT switches, LED lamps, 3½ digit digital voltmeter, 3½ digit digital ammeter (0 - 200mA), Banana connectors and fuses provided to demonstrate the Digital & Analog input/output functions by PLC. A point to point interface communication cable provided to interconnect PLC with PC



* SPDT switches provided to feed the digital input as high/low.
* LEDs provided to indicate the digital output of PLC as high/low.
* A 3½ digit digital voltmeter and digital ammeter provided for voltage/current indication in PLC.
* Miniature connectors provided for patching internally.
* All the components mounted in a powder coated cabinet with screen printing.
* Windows based user friendly software having user instructions that enables the users to derive it easily and its features are
  # Easy handling
  # Configuration instead of programming the wizards
  # Powerful instruction set easy to use via drag and drop.

1. PROGRAMMABLE LOGIC CONTROLLER TRAINERS

1. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR [VPLCT-01G]

This trainer is based on GE Fanuc's VersaMax Nano PLC. This trainer consists of (i) Nano PLC, (ii) Demonstration Panel, (iii) Programming software

Demonstration unit consists of SPDT switches as Digital Input, LED lamps to indicate the digital output status, Programming software to program in the ladder language etc.

i) PLC Specifications:

* Make: GE Fanuc PLC
  Model: IC200NDD101.
* 6 Digital Inputs (24V DC).
* 4 Digital Outputs (24V DC)
* 2K Words of memory, 256 words of register
* Powerful features like built in Floating Point, Sub Routines etc
* One RS232 C communication facility for PC interface.
* Three channel can be configured as follows,
  # Pulse width modulation output or
  # Pulse train output or
  # High speed counter input.

ii) Demonstration Panel:

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the Nano PLC

* 6 SPDT Switches provided to simulate the Digital inputs.
* 4 LEDs provided with fuse protection to simulate the digital outputs.
* Connector provided for PWM termination.
* One 24VDC Source Provided for front panel wiring.
* One HSC Counter termination facility provided.
* One RUN/STOP Switch is provided
* Connectors provided for external interface application.
* All the components are mounted on an attractive powder coated metal frame
* Mimic diagram with screen printing provided in the panel.

iii) Programming Software:

Windows based powerful ladder development programming software provided with following facilities.

* Supports for instruction list.
* Relay ladder diagram editors.
* PID control algorithm.

2. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR : [VPLCT-01S]

This trainer consists PLC, Demonstration panel, programming software provided to study the concepts of PLC.

PLC Specification :

i. PLC Make : Siemens
Model : CPU 221

* Bit processing speed 0.22 us
* Timers, counters each 256
* 6 Digital inputs
* 4 Nos Digital outputs (24V DC)
* Program memory 4KB, Data memory 2KB
* 4 High speed counter 30 KHz
* 2PWM outputs in 20KHz
* Battery back up Available
* RS 485 Communication interface
* Real time Clock optional
* Integrated 8 bit analog Potentiometer

ii. Demonstration Panel:

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the PLC

* 6 SPDT Switches provided to simulate the Digital inputs.
* 4 LEDs provided with fuse protection to simulate the digital outputs.
* One PWM termination Connector.
* One 24VDC Source Provided
* One HSC Counter provided for external interface.
* One RUN/STOP Switch is provided
* Connectors provided for external interface application.
* All the components are mounted on an attractive powder coated metal frame
* Mimic diagram with screen printing provided in the panel.

iii. Programming Software :

* Windows based Power ful software provided to write program in ladder languages.
* Siemens PLC programming software.
  # Step7 200.
  # IEC 6113 standard

iv. Interface Cable

A special point to point interface cable provided for communication.

3. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-01 AB)

This trainer consists Allen Bradley make PLC, Demonstration panel, ladder software to study the concepts, and programming of programmable logic controller.

Demonstration panel consists of switches and LEDs to demonstrate input, output functions etc.

i. PLC

* Make : Allen Bradley.
  Model: 1761 - L10BWB
* Built in power supply (+24V DC).
* 6 digital inputs for input interface (max 24VDC).
* 4 relay outputs for output interface.
  Contacts AC/DC 230 Volt.
* Fuses provided in the Demonstrator panel to protect PLC against any short circuit.

ii. Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the Nano PLC

* 6 SPDT Switches provided to simulate the Digital inputs.
* 4 LEDs provided with fuse protection to simulate the digital outputs
* One PWM Connector facility Provided.
* One 24VDC Source Provided for internal patching.
* One HSC Counter connector facility provided.
* Connectors provided for external interface application.
* All the components are mounted on an attractive powder coated metal frame
* Mimic diagram with screen printing provided in the panel.

Experiments

Ladder diagram for any application
Download to the PLC and check for the required result
Interface the working models and test the applications.

iii. Programming Software

* Window based Programming software
  RS logic 500 starter kit software
  IEC 6113-Standard Ladder programming software with SFC,...

4. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-01A)

This trainer is based on ABB make PLC with Demonstrator panel provided for input/output demonstration. A user friendly flexible ladder software provided for programming.

i. PLC Specification

* Make : ABB
  Model : LM025C12TDC
  Operating Voltage Input : 24VDC
* 8 digital inputs (2 I/P can be configured as analog input range 0 - 10V DC) (Voltage level 24VDC).
* 4 digital outputs for output Interface (Voltage level 24VDC)
* A miniature built in LCD display for stand alone indication.
* 5 function built in keys provided for stand alone programming
* A communication cable provided for PC interface. Model [PC/AC010].

ii. Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the ABB PLC.

* 6 SPDT Switches provided to simulate the Digital inputs.
* 4 LEDs provided with fuse protection to simulate the digital outputs.
* One PWM Connecting facility Provided.
* One 24VDC Source Provided
* One HSC Counter connecting facility provided.
* One RUN/STOP Switch is provided
* Connectors provided for external application interfaces
* All the components are mounted on an attractive powder coated metal frame
* Mimic diagram with screen printing provided in the panel.

iii. PC Programming Software

* Windows based programming software (ACO10)
  8-timers.
  4-counters.
  8-Analog comparators.
  Maximum programming steps 41.

5. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR [VPLCT-02 G]

This advanced Ge Fanuc Based PLC trainer having additional expansion interface facility of digital I/O, analog I/O. So that user can be configured for control application study.

The Trainer consists of

i. PLC
ii. Demonstration panel
iii Programming software.

i. PLC Specifications

* Make : Ge Fanuc.
  Model: IC 200 UDR001
* 8 Digital Inputs. (Max 24VDC)
* 6 Digital Outputs, (max 24VDC)
* 9K words of memory with battery backup
* Supports PID, Floating Point, Sub Routines expansion facility upto 4 modules.
* One RS232C Interface communication PC.
* 3 channel can be configured as PWM (Pulse With Modulation) /HSC (High Speed Controller)/PTO (Pulse Train Output).

ii. Demonstration Panel:

The Demonstration panel consist of all necessary connectors, switches and LED provided to integrate by patch chords and study the Ge Fanuc PLC.

* 8 SPDT Switches provided to simulate the digital inputs.
* 6 LEDs mounted in the panel with fuse protection visualize the digital output status.
* One 24VDC source provided for Demonstration panel supply.
* One Highspeed counter/PWM provided for external application.
* All inputs/outputs are terminated in the front panel for user interface.
* All the components are mounted in attractive powder coated metal frame with screen printed panel.

iii. Programming Software

Windows based powerful ladder development programming software provided with following facilities.

* Supports for instruction list.
* Relay ladder diagram editors.
* PID control algorithm.

6. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-02S)

This trainer consist of

i. PLC.
ii. Demonstration panel.
iii. Programming cable.
iv. Communication cable.

This PLC trainer also having additional interface expansion of digital I/O, Analog I/O expansion module.

i. PLC Specification

Make : Siemens
Model : CPU222

* 8 Digital input (level 24VDC).
* 6 digital output (level 24VDC).
* 4 KB program memory.
* 2 KB data memory.
* 4 channel high speed counter (max freq 30KHz)
* 2 channels of PWM output (max freq 20KHz)
* 0.22 µsec bit operation speed.
* 256 Nos of flags/timers/counter.
* Communication baud rate (max 187.15K).
* A optional real time clock.
* One RS 485 communication provided for serial interface.
* Built in miniature potentiometer for zero, span adjustment for analog input.

ii. Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the siemens PLC.

* 8 SPDT Switch provided to simulate the digital inputs.
* 6 LEDs mounted in the panel with fuse protection visualize the digital output.
* One 24VDC source provided for Demonstration panel supply.
* One Highspeed counter/PWM provided for external application.
* All Inputs/Outputs are terminated in the front panel for user interface.
* All the components are mounted in attractive powder coated metal frame with screen printed panel.

iii. Software

* Windows based Power ful software provided to write program in ladder languages.
* Siemens PLC programming software
  # Step7 200 IEC 6113 standard.

iv. Interface Cable

A special point to point interface cable provided for communication.

7. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-02A)

This trainer consists of ABB make PLC, Demonstration panel, programming software to perform experiments in PLC switches, lamps provided in the Demonstration panel for logical study. Software provided to do ladder programming,

i) PLC Specification

Make : ABB
Model : KT51

* 8 Digital input's (level 24V DC)
* 6 Digital transistor output's (level 24V DC)
* 32KB built in memory for program storage.
* Build in EPROM & RAM.
* 2 channel high speed counters.
* Serial interface can be configured as RS 232 or RS 485.
* Supply voltage 24V DC

ii. Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the ABB PLC.

* 8 SPDT Switch provided to simulate the digital inputs.
* 6 LEDs mounted in the panel with fuse protection visualize the digital output status.
* One 24VDC source provided for Demonstration panel supply.
* One Highspeed counter/PWM provided for external application.
* All inputs/outputs are terminated in the front panel for user interface.
* All the components are mounted in attractive powder coated metal frame with screen printed panel.

iii. Programming Software

* Programming through “AC 31GRAF” software.
* Un limit timers counters supporting facility.
* Interface protocols [CS31, ASCII, MODBUS]

8. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR [VPLCT-03 G]

This advanced trainers consists of the special features such as A/D, D/A and man machine interface (MMI). Along with PLC. So that the students can perform programming study through PLC.

i. PLC Specification:

* Make : Ge Fanuc.
  Model: IC 200 VAL005
* Power supply 24VDC
* 2 Analog inputs (12 bit resolution) with programmable and calibration facility for processing the transducers of 0-10V/ 4-20mA/ 0-20mA.
* 1 Analog output (12 Bit resolution) 0-10V/4-20mA/0-20mA
* 13 Digital inputs (24V DC)
* 9 Digital outputs (Relay contact AC/DC/2Ams)
* One digital out (24V DC)
* One constant 24V DC source provided.
* Memory 9K bytes with battery backup.
* The PLC have status indication for Knowing the I/O status, and has the self diagnostic features.
* One RS232C Interface for communication with PC
* One RS485 Interface for multi drop applications.
* Built in high speed counter (HSC) function that can be configured as four type A counter and or as one type B counter and one type A counter.
* Provision to expand upto 84 I/O.
* Powerful instruction like PID, floating point math, sub routines, several read/write commands.

ii. Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the Ge Fanuc PLC.

* 13 SPDT Switches provided to simulate the Digital inputs.
* 10 LED Lamps with fuse protection provided to simulate the Digital outputs.
* 4 HSC counters provided max freq 15KHz.
* One channel PWM provided max freq (5KHz).
* One 24VDC source provided for patching the Demonstration panel.
* Two analog source (0-5V) (0-20mA) provided for external interface.
* One 3½ Digit al display for voltage(0-10V) indication.
* One 3½ Digit display for current (0-20mA) indication.
* All I/O and O/P are terminated on the panel on socket type connector for easy interconnection.
* All components are mounted in attractive powder coated metal frame
* Mimic diagram with screen printing provided.
* PLC integrated with Demonstration panel for compact size.

iii. Programming Software:

Windows based powerful ladder development programming software provided with following facilities.

* Supports for instruction list.
* Relay ladder diagram editors.
* PID control algorithm.

9. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR : VPLCT-03S

This trainer is based on Siemens make PLC with Powerful features. It consist of

(i) PLC module (ii) Demonstration Panel, iii. Software, iv. Communication cable

The Demonstration unit consist of SPDT Switches as Digital input, LED Lamps to indicate the Digital output status for logical Demonstration.

i. PLC Specification

* Make: Siemens
  Model: CPU 224 XP
* 14 Digital inputs 24V DC
* 10 Digital output (24VDC)
* 2 analog inputs can be configured as 0-10VDC or 4-20mA.
* 12KB Program memory
* 8KB Data memory
* 6 High speed counter for 30 KHz
* Built in Real time clock.
* One RS 485 communication for PC interface.
* 0.22µS bit Processing Speed
* 2 channel PWM output (max speed 20KHz).
* 256 Timers, counter.
* Integrated 8 bit analog Potentiometer provided analog calibration.
* 1 Analog output can be configured as 0-10VDC or 4-20mA.

ii. Demonstration Panel:

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the Siemens PLC.

* 13 SPDT Switches provided to simulate the Digital inputs.
* 10 LED Lamps with fuse protection provided to simulate the Digital outputs.
* 4 HSC counters provided max freq 30KHz.
* 2Nos PWM provided max freq (100 KHz).
* One 24VDC source provided for patching the Demonstration panel.

* Two analog source (0-5V) (0-20mA) provided for external interface.
* One 3½ Digit al display for voltage(0-10V) indication.
* One 3½ Digit display for current (0-20mA) indication.
* All I/O and O/P are terminated on the panel on socket type connector for easy interconnection.
* All components are mounted in attractive powder coated metal frame
* Mimic diagram with screen printing provided.
* PLC integrated with Demonstration panel for compact size.

iii. Software :

* Windows based Power ful software provided to write program in ladder languages.
* Siemens PLC programming software.
  # Step7 200.
  # IEC 6113 standard

iv. Interface Cable

A special point to point interface cable provided for communication.

10. PIC MICROCONTROLLER BASED PLC TRAINER [VPLCT-04 VI]

This powerful trainer is designed to teach the students the basics of programmable logic controller (both hardware and software). The hardware consists of PIC Microcontroller, Inputs/outputs like AI,AO,DI & DO, counter/timer, PWM etc. The software learning package offers full exposure in all softwares related to PLC & SCADA. No body else offers these feature in the market. Even Field bus like MODBUS can be ported to this trainer.

The learning software package consists of,

a). Ladder Program with source code in VBASIC for the students to modify and add more features. So that, the student becomes much familiar with the structure of a ladder program.
b). A separate Powerful ladder program to write many application based on PLC Trainer provided.
c). A Demonstration panel is also provided, so that, simulated Digital inputs, Digital outputs, Analog inputs, Analog outputs can be feed to the PLC trainer.

We provide a limited version of ladder diagram program written in VBASIC with source code. The student can study this software and add additional I/O elements to this program, which enables him to completely understand the ladder diagram program.

Benefits of the PLC trainer

* The hardware which consists of a PIC Microcontroller, ADC, DAC, Digital input, Digital output, memory etc., are fully exposed to the student, which enables the student to understand the hardware aspect of a PLC.
* Development software consists of a "C" Compiler, source c code for ladder diagram is provided to the student so that, they can add more features to ladder diagram programming.
* The ladder editor is written in VBASIC, the ladder program is created. The program will generate the corresponding 'C' codes for PIC micro controller. This 'C' source code is compiled by 'C' Compiler and the corresponding output is transferred to PIC Controller to run the application.

* By configure the RS232/RS485 serial port to MODBUS protocol, this can be linked to any commercial SCADA package like Cimplicity, RSVIEW, Word & Ware.
* PIC18F8720 based RISC architecture
* Clock Frequency : 40MHz
* Single +5V Operation
* On-chip 128K bytes Flash program memory
* On-chip 3840 bytes data memory
* On-chip 1034 bytes of EEPROM
* 1M Bytes external Data memory

Discrete I/O :

* 8 bit opto isolated digital outputs
* 8 bit opto isolated digital inputs
* 10 bit, 16 Channel Analog inputs
* 8 bit, 2 channel Analog outputs
* 10 bit 2 channel PWM outputs

Demonstration Panel:

* 8 Nos. of SPDT switches to demonstrate digital inputs
* 8 Nos. of LED lamps for Simulating digital outputs
* 8 Channel Analog Inputs
* 2 Channel Analog O/P (Voltage) (0-5V) (can be configured to connect ADC input)
* 3½ Digit Display for ±20 Volt FSD
* Many example Programs provided with detailed documentation
* The above hardware are mounted in a powder coated cabinet with connector provision for interface.
* Digital Inputs & Outputs are terminated at socket connectors
* Analog I/O & PWM are terminated at socket connectors.

Serial communication :

* One serial port compatible for RS232 & RS485
* MODBUS protocol can be optionally configured.

Learning Software Package:

* A Ladder program software (Limited version) written in V Basic is provided to the students with complete listing such that the student can further develop it to more powerful ladder software.
* A separate window based ladder diagram program for 4 pages will be provided
* Animation of input & output can be seen in the GUI Screen.

11. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-05G)

This trainer consist of Ge Fanuc PLC and expandable analog module and demonstration unit & software provided to study PLC for laboratory purposes. This trainer also includes the features of analog interface (4-20mA & 0-5VDC) for real time application. This trainer contains

i. PLC.
ii. Demonstration panel.
iii. Software.

i. PLC Specifications

* GE FANUC PLC, Model : IC 200 UDD110, IC 200 UEX 636, IC 200UEX012
* 24 configurable DC inputs that can be used as positive / negative logic
* 18 digital output (voltage level 24VDC)
* Expandable upto 80 points [by using four 14 points).
* 9K word of program memory, 2048 register
* Optional lithium battery for backup facility.
* Two serial port communication (RS232, RS485) for serial interface.
* Outputs internal SCR protected. (so that not required external fuses)
* 2 Analog outputs available Voltage : 0-10V, Current : (0-20mA, 4-20mA)
* 13 bit resolution for analog I/P & O/P
* 4 analog configurable input (range 0-10VDC, 4-20mA, 0-20mA)

ii. Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the ABB PLC.

* 24 SPDT Switches provided to simulate the Digital inputs.
* 16 LEDs provided with fuse protection to simulate the Digital outputs.
* One 3½Digit display provided to display the Voltage.
* One 3½Digit display provided to display the current.
* One 24V DC source provided for internal patching.
* Two analog source provided (0-5V) (0-20mA) for internal patching.
* All I/P's & O/P's are terminated on the Panel on socket type connector for easy interconnecting of Application
* All the components are mounted in attractive powder coated metal frame.
* Inputs and Outputs Mimic diagram with Screen printing provided.

iii. Software

Windows band powerful software provided to support special functions. Such as

a. Configurable man machine interface (MMI) unit.
b. AC/DC drives interface facility.
c. PLC applications such as ladder language, instruction list.

12. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-05S)

This trainer is based on Siemens make micro PLC, with powerful features. It consist of

i. CPU 226
ii. Analog input module
iii. Analog output module
iv. Demonstration panel
v. Communication Cable

Demonstration panel consist of SPDT Switches Digital input, LED Lamps to indicate the Digital output, Display module provided to display the voltage and current. Programming software to program the Ladder Language separate analog I/O modules provided for analog interface.

i. PLC Specification

* Make : Siemens
  Siemens make PLC-CPU 226
  Analog input module EM 231
  Analog output module EM 232
* 24 Digital inputs (24VDC).
* 16 Digital outputs (24VDC)
* 4 Analog configurable inputs (0-10V) (4-20mA)
* 2 Analog configurable output (0-10V) (4-20mA)
* Program memory 24KB, Data memory 10KB
* 6 High Speed counters speed 30KHz
* 2 PWM outputs with 100KHz
* 0.22MS bit operating speed
* 256 Timers & counters.
* 2 Integrated 8bit Analog Potentiometer
* Built in Real time clock
* Digital/Analog expandable possible

ii. Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the ABB PLC.

* 24 SPDT Switches provided to simulate the Digital inputs.
* 16 LEDs provided with fuse protection to simulate the Digital outputs.
* One 3½Digit display provided to display the Voltage.
* One 3½Digit display provided to display the current.
* One 24V DC source provided for internal patching.
* Two analog source provided (0-5V) (0-20mA) for internal patching.
* All I/P's & O/P's are terminated on the Panel on socket type connector for easy interconnecting of Application
* All the components are mounted in attractive powder coated metal frame.
* Inputs and Outputs Mimic diagram with Screen printing provided.

iii. Programming Software :

* Windows based Power ful software provided to write program in ladder languages.
* Siemens PLC programming software step 7 200 IEC 6113 standard.

iv. Interface Cable

A special point to point interface cable provided for communication.

13. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-05A)

This trainer kit is based on ABB PLC module with powerful features. It consist of,

i. Logic Module
ii. Demonstration unit.
iii. Programming software.

Demonstration unit consist of SPDT Switches Digital input, LED Lamps to indicate the Digital output, Display module provided to display the voltage and current. Programming software to program the Ladder Language

i) PLC Specifications

CPU Model No.[KT51+x1 16 E1+XO 08 RL+XM 06 B5](24V DC)

CPU with I/O :

* Model : KT51
* 8 Digital Inputs (24V DC input)
* 6 Digital output (24V DC output)
* All the Digital outputs are transistor output
* 32KB of program memory
* Program memory has both flash EPROM & RAM
* Supports 2 high speed counters
* Special interface is Done by RS232 or RS485

Expansion Unit:

Input

i. Digital Module: X116E1

* 16 Digital inputs 24VDC.

ii. Digital output module: X008R1

* 8 Digital outputs
  # 4 Normally open outputs
  # 4 normally open and normally closed outputs

iii. Analog I/O Module

* Model : XM06B5
* 4 Analog input (Voltage / Current configurable)
* 2 Analog output (Voltage / Current configurable)

ii) Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the ABB PLC.

* 24 SPDT Switches provided to simulate the Digital inputs
* 16 LEDs provided with fuse protection to simulate the Digital outputs
* One 3½Digit display provided to display the Voltage
* One 3½Digit display provided to display the current
* One 24V DC source provided
* Two analog source provided (0-5V) (0-20mA)
* One ON/OFF Switch provided
* All I/P's & O/P's are terminated on the Panel on socket type connector for easy interconnecting of Application
* All the components are mounted in attractive powder coated metal frame.
* Inputs and Outputs Mimic diagram with Screen printing provided.

iii) Programming Software

* Programming is done by AC 31GRAF
* Supports unlimited timers and counters
* Interfaces and Protocols are CS31, ASCII, MODBUS.

14. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-06S)

This trainer is based on Siemens make micro PLC, with Quite powerful features It consist of

i. CPU 222 Analog input module
ii. Analog output module
iii. Demonstration unit
iv. Programming Software
v. Communication Cable

i. PLC Specification

* Make : Siemens
  Model : CPU222

Expansion Unit:

EM223, EM231 & EM232

* 12 Digital inputs,10 Digital output (24VDC)
* 4Analog configurable input (0-10V), (0-20mA) & (4-20mA)
* 12bit analog input resolution
* 2 Analog configurable output (0-10V), (0-20mA) & (4-20mA)
* Resolution : 12 bit.
* 0.22µs bit operating speed
* Timers & Counters each 2560
* Maximum baud rate 187.5
* Supply voltage 24VDC
* Optional Real time clock
* Built in one analog Potentiometer.

ii. Demonstration Panel

This Demonstration panel consists of all necessary connectors switches and LEDs provided to interconnect by patch chords and study the ABB PLC.

* 12 SPDT Switches provided to simulate the digital inputs
* 8 LED Lamps provided with fuse protection to simulate the digital outputs
* Two 3.5 digit display provided to display analog voltage and current
* 4 Analog configurable inputs with (0-10V,(4-20mA) & (0-20mA)
* 2 Analog configurable outputs with (0-10V), (4-20mA) & (0-20mA)
* 2Nos Potentiometer provided for Analog source (0-5V) (0-20mA)
* All I/P & O/P are terminated on the panel with socket type connector for easy interconnection of Application
* Voltage 12 bit Resolution,Current 11 bit Resolution
* All Components are mounted in attractive powder coated metal frame.
* Mimic diagram with screen printing provided.

iii. Programming Software :

* Windows based Powerful software provided to write program in ladder languages.
* Siemens PLC programming software.
  # Step7 200.
  # IEC 6113 standard

iv. Communication Cable

The special point-to-point interface (PPI) cable for Siemens product for RS485 Via PC to PLC Communication

15. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-06 A)

This trainer kit is based on ABB make PLC module with powerful features. It consist of,

i. PLC ii. Demonstration unit. iii Programming software.

Demonstration panel consist of SPDT Switches Digital input, LED Lamps to indicate the digital output, Display module provided to display the voltage and current. Programming software to program the Ladder Language

i) PLC Specifications

* Make: ABB
* Model No : KT 95
* 12 digital inputs 24VDC
* 8 digital output 24VDC
* 4 Analog input 4-20mA
* 2 Analog output 4-20mA
* 480KB of program memory
* Program memory has both flash EPROM & RAM
* Supports two high speed counters
* Operating voltage 24VDC.

ii) Demonstration Panel

The Demonstration panel consist of all necessary components & connector to interface the application trainer with PLC.

* 12 SPDT Switches provided to simulate the digital inputs of PLC
* 12 LED Lamps provided with fuse protection to simulate the digital outputs
* Analog I/P & O/P will be provided in the panel with the necessary connector
* All I/P & O/P are terminated on the panel with socket type connector for easy Interconnection for application.
* PLC, Demonstration components an integrated in a powder coated cabinet with panel.
* One 24V DC source provided for front panel inter connection.
* Mimic diagram with screen printing provided.

iii) Programming Software

* Programming is done by 907 AC 1131
* Supports unlimited timers and counters
* Interfaces and protocols are CS31, ASCII, MODBUS

16. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-07G)

This trainer is based on GE Fanuc's versamax micro, PLC with powerful features.

It consist of

i) Micro PLC ii) Demonstration Panel iii) Programming software

Demonstration panel consist of SPDT switches as Digital input, LED Lamps to simulate Digital output status. Programming software to program in Ladder language

i. PLC Specification

* 24V DC supply for PLC operation
* 16 configurable DC inputs can be used to positive/negative logic
* 12 DC output can be used as positive logic, high speed counter O/P, PWM, PTO.
* Expandable upto 84 points
* Capacitor back up RAM and time day clock
* Time day clock
* Two analog potentiometers
* 9K program memory, 2048 registers
* Two serial port communication (RS232, RS485) provided RTU can be configure
* A memory protect switch, provided for clearing faults when a fatal fault exits
* Flash memory (ROM) for non-volatile program storage and system firm ware

ii. Demonstration Panel

* 16 SPDT Switches provided to simulate to the digital inputs
* 12 LED Lamps provided with fuse protection to simulate to the digital outputs
* One 24 V DC source provided for panel utility
* 2 Channel PWM (or) HSC connecting facility provided
* All inputs are terminated on the frontpanel on socket type connector for inter connecting for application
* All the components are mounted in attractive powder coated metal frame

iii) Software

Windows based powerful ladder development programming software provided with following facilities.

* Supports for instruction list
* Relay ladder diagram editors
* PID control algorithm

17. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-07S)

This trainer is based on Siemens make PLC It consist of,

i) Micro PLC ii) Programming Software, iii) Communication cable

Demonstration panel consist of SPDT switches, as digital inputs LED Lamps to simulate digital outputs, software to program in ladder language.

i) PLC Specifications

* Make : Siemens
* Model: CPU 224
* 14 Digital inputs (24V DC)
* 10 Digital outputs (24V DC)
* Data memory 12KB, Program memory 12KB
* 0.22 Msec bit operating speed
* 256 Timers, Counters.
* Built in real time clock
* 24V DC power supply for operating voltage
* RS485 Communication interface
* 6 High speed counter with 30 KHz
* 2PWM outputs with 20 KHz
* 32 bit floating point for Arithmetic operation

ii. Demonstration Panel

The demonstration panel consist of all necessary components & connector to interface the application trainer with PLC.

* 14 SPDT Switches provided to simulate to the digital inputs
* 10 LED Lamps provided with fuse protection to simulate the digital outputs
* One 24 V DC source provided for panel utility.
* 2 Channel PWM (or) HSC connecting facility
* All the components are mounted in attractive powder coated metal frame
* All inputs are terminated on the frontpanel on socket type connector for inter connecting of application.

iii. Programming Software :

* Windows based Power ful software provided to write program in ladder languages.
* Siemens PLC programming software.
  # Step7 200.
  # IEC 6113 standard

iv. Interface Cable

A special point to point interface cable provided for communication.

18. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH DEMONSTRATOR (VPLCT-07A)

This trainer is based on ABB make PLC. It consist of,

i. PLC ii. Demonstration Panel iii. Programming software

Demonstration panel consist of SPDT Switches as Digital input, LED Lamps to indicate the Digital output, Display module provided to display the voltage and current. Programming software to program the Ladder Language

i) PLC Specifications

Based on ABB PLC (Small PLC)
Model No : [KT95 + XK 08 F1]

CPU with I/O Module :

* Model KT95
* 12 Digital Inputs (24 VDC)
* 8 Digital output (24 V DC)
* 4 Analog Input 4-20mA
* 2 Analog output 4-20 mA
* 480KB of program memory
* Program memory has both flash EPROM & RAM

Digital I/O Module

* Model : XK 08 F1
* 4 Digital inputs 24 V DC
* 4 relay outputs AC/DC 230V/(2A)

ii) Demonstration Panel

The demonstration panel consists of all necessary connector to interface the application trainer with the PLC

* 16 SPDT Switches provided to simulate the digital input of PLC
* 12 LED Lamps provided with fuse protection to simulate the digital outputs
* All I/P & O/P are terminated on the panel with socket type connector for easy Interconnection of Applications
* The PLC, SPDT Switches and LED will be fixed in a powder coated Integrated panel
* Separate connectors provided for Analog I/P & O/P in panel
* 24V DC source provided
* Mimic diagram with screen printing provided

iii) Programming Software

* Programming is done by 907 AC1131
* Supports unlimited timers & counters
* Interfaces & protocols are CS31, ASCII, MODBUS

2. PROGRAMMABLE LOGIC CONTROLLER TRAINER WITH APPLICATION TRAINER

1. PLC + 4 TYPES REAL TIME APPLICATION TRAINER : [VP+AT-01]

This trainer consist of GE Fanuc PLC with 4 Real time application like DC motor speed control, Opto coupler, Traffic light control, to study the various real time implementation using PLC. The students can write a program in ladder language to prove and study using this trainer.

i. PLC Specification:

* Based on GE Fanuc PLC [Model: VersaMax - Nano (IC200NDD101)]
* 6 Digital Inputs (24V DC Input)
* 4 Digital Outputs (24V DC Output)
* 2K Words of memory, 256 words of register
* Powerful features like Floating Point, Sub Routines etc
* Supports 2 high speed counters (10 Khz)
* One RS232C Interface for communication with PC.
* Supports three channel PWM & PTO outputs (5KHz)

ii. Application Panel :

* One 12V miniature DC motor with optical speed encoder for pulse counted by the PLC.
* One proximity switch to connect to the input of PLC.
* Traffic light Demonstration is provided with Mimic diagram and color LEDs.
* One Solid state relay provided to enable the PLC to do a SSR.

iii. Programming Software :

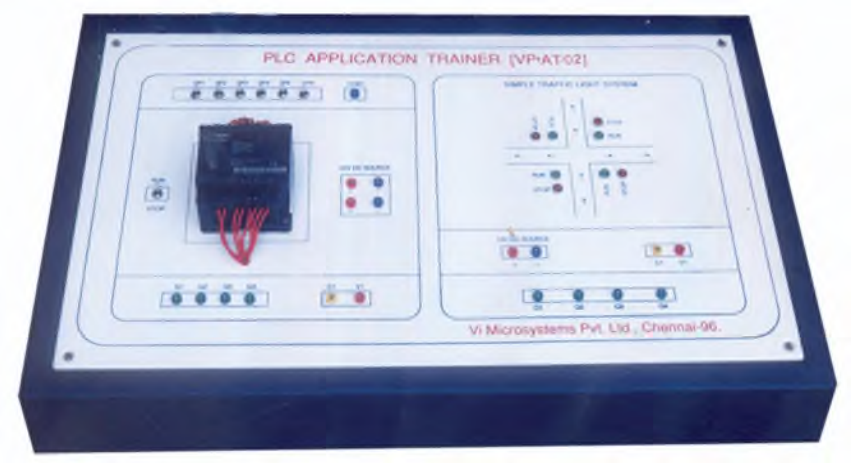
* WINDOWS based Ladder development program.
* It provides support for instruction list and relay ladder diagram editors, providing the ability to switch between the 2 layers.
* Supporting facility for PID algorithm.

2. PLC + ONE REAL TIME APPLICATION TRAINER (VP+AT-02)

This trainer consist of PLC, with one Real time application (Traffic Light Control) to study the implementation in Real time. The students can write a program in ladder language to study the traffic light system by modifying the signal delays.

PLC Specification:

* Based on GE Fanuc PLC [Model: VersaMax-Nano (IC200NDD101)]
* 6 Digital Inputs (24V DC Input)
* 4 Digital Outputs (24V DC Output)
* 2K Words of memory
* Powerful Instructions like PID, Floating Point, Sub Routines etc
* Supports 2 high speed counters (10KHz)
* 3 PWM Outputs (5 KHz)
* PWM Outputs can be used as Analog Output
* 2 High speed inputs can be used as Analog Inputs through V/F Converters
* One RS232C Interface for communication with PC



Application Panel:

* Traffic Light Demonstration is provided with Mimic diagram and color LEDs

Software:

* Ladder development program (Windows based and support PID algorithms)
* It provides support for Instruction list and relay ladder diagram editors, providing the ability switch between the 2 layers

3. PLC + ONE PNEUMATIC APPLICATION : [VP+AT-03]

This trainer consist of PLC with one Real time pneumatic application (Pneumatic circuit) to study & operate the pneumatic components by PLC. The students can study the individual pneumatic components by programming in ladder language.

Specifications

* PLC make : GE FANUC
* Model : IC200NDD101
* 6 digital inputs (max 24VDC)
* 4 digital outputs (max 24VDC)
* 2K words of memory, 256 words of register
* Floating point, subroutine facility etc
* Two high speed counters (max freq 10 KHz)
* One Rs 232C interface for PC communication
* All the components are mounted in a powder coated metal frame
* One air regulator/filter/lubricator provided to filter the particles of dirt, pipe scale, Rust of the compressed air
* A pressure regulator provided to regulate the input pressure
* A safety handvalve provided to shut off the input air for safety purpose
* One manifold valve provided to feed multiple input
* 3 nos solenoid valve provided to control the pneumatic cylinder
* 3 nos of pneumatic cylinder with adjustable magnetic switch provided for displacement detection (travel 50mm)

This trainer gives complete exposure to the students to link all the pneumatic components to the PLC. The students can write ladder programmer to control individual components.

3. REAL TIME APPLICATION MODULES FOR PLC TRAINERS

REAL TIME APPLICATION MODULES FOR PLC TRAINERS

We are offering various Real time Application modules to study the measurement & control applications. Such as lift control, level, flow, temp, speed control, process control Using PLC.

Sensor, Actuators, signal conditioners, Power supply are provided in the Application modules so that any application trainer can be easily inter facea ble with PLC through patch chords and flexible inter connections. Students can perform experiments through ladder programming.

1. PLC RTA - 8 Type of Real time Application module : [VPAT - 01]
2. PLC RTA - DC motor speed control module : [VPAT - 02]
3. PLC RTA - Traffic light control module : [VPAT - 03]
4. PLC RTA - Bottle filling module : [VPAT - 04]
5. PLC RTA - Batch process Reactor module : [VPAT - 05]
6. PLC RTA - Level control module : [VPAT - 06]
7. PLC RTA - Material handling module : [VPAT - 07]
8. PLC RTA - Pneumatic stamping module : [VPAT - 08]
9. PLC RTA - Pneumatic Battery testing module : [VPAT - 09]
10. PLC RTA - AC motor Speed Control module : [VPAT - 10]
11. PLC RTA - Temperature controller module : [VPAT - 11]
12. PLC RTA - Linear Actuated Hydraulic module : [VPAT - 12]
13. PLC RTA - Relay Testing module : [VPAT - 13]
14. PLC RTA - Direct - on - line starter module : [VPAT - 14]
15. PLC RTA - STAR - Delta Stater module : [VPAT - 15]
16. PLC RTA - Car Parking Monitor module : [VPAT - 16]
17. PLC RTA - Lift Control module : [VPAT - 20]

1. PLC RTA - 8 TYPE OF REAL TIME APPLICATION MODULE [VPAT - 01]

This demo unit has all Demonstration components provided to interface with PLC. It consists of components like Optical, Proximity, DC motor, Solid State Relay Traffic light Demonstration etc.

Specifications

* 2 Annunciators provided for output indication.
* One 2Kg stepper motor fixed in the platform with connector provided to interface with PLC.
* One 12V miniature DC motor with optical encoder provided as feed back.
* One limit switch with LEDs provided to simulate the PLC input.
* One Buzzer provided to simulate the output of PLC
* Traffic light Demonstration is provided with Mimic diagram and color LEDs.
* One Solid state relay provided to enable the PLC to do ON/OFF operation.
* One Proximity switch for metal detection.

Note : The above application trainer can be interfaced to our following PLC's

All the components are fixed in a Table Top Powder coated Cabinet with suitable connectors provided to interface PLC.

2. PLC RTA - DC MOTOR SPEED CONTROL MODULE [VPAT - 02]

This module consists of, 12V PMDC motor, PWM based driver, speed indicator and other necessary components to establish a closed loop speed control of a 12 Volt Powerful High torque PMDC motor, by using the PLC as ON/OFF or PID controller,by PWM driving technique

The details of this module is as follows

* One 12Volt PMDC motor
* Optical sensor with F/V converter provided to sense the speed of the motor at outputs 0-10Volt corresponding to 0-1500 rpm speed.
* One PWM amplifier to feed the armature voltage Output: 0-12Volt DC/Lamps.
* PWM amplifier, F/V converter and DPM are housed in a separate cabinet.
* The PMDC motor with optical sensor is fixed on a mechanical frame.
* **Experiments:**
  # To study the speed control of the DC motor using PLC
  # To study the closed loop operation of DC motor in PID mode by using proportional, integral, derivative gain.

3. PLC RTA - TRAFFIC LIGHT CONTROL MODULE [VPAT - 03]

This trainer consist of a Traffic Light System represented in a panel with different color LED's. Each Road traffic conjuction is sensed by Opto coupler. The termination are mounted in a connectors to interface with PLC.

* This application trainer provides the implementation of traffic light control system in PLC.
* Two opto coupler sensor is provided to sense the road traffic density
* User flexibility to modify the ladder program in versapro.
* Powder coated metal cabinet with screen front panel for easy study.

4. PLC RTA - BOTTLE FILLING MODULE [VPAT - 04]

It consists of a stepper motor controlled Rotary mechanism, power supply, solenoid valve, tank, one proximity sensor and one optical sensor to study the concepts of bottle filling in a station by PLC.

* One proximity sensor to detect the bottle presence
* One opto sensor to detect the bottle position.
* A mechanical base fixed with stepper motor and gear mechanism provided to hold 5 bottles and rotate in circular motion.
* One tank provided to hold liquid.
* One solenoid valve to control the volume of liquid flow into the bottle.
* Power supply provided.
* One Reservoir tank with FHP pump to feed the water to supply tank
* Two magnetic switches to maintain the two fixed level of water of supply tank

* **Applications:**
  # To study the bottle filling of different volume.
  # To study the solenoid valve operation through PLC
  # To study the stepper motor operation through PLC
  # To study the water level ON-OFF control through PLC

5. PLC RTA - BATCH PROCESS REACTOR MODULE [VPAT - 05]

This trainer consist of a process tank, supply tank, solenoid valve, stepper motor actualized conveyor system, proximity sensor is provided to study the batch process of a heated liquid by interfacable PLC. The sequence of instruction in the ladder program control the execution.

The details of this module is as follows:

* Two reservoir tank to hold the two different colors liquids.
* Each tank provided with high quality DC operated solenoid valves to pour the liquid in to the process vessel.
* A miniature heater provided in the process tank to heat the mixed liquid.
* One process tank fitted with a stirrer to stirr the liquids and to maintain equal temperature throughout the process vessel.
* Two magnetic type level switches provided in the process tank to control the volume of liquid poured into the process vessel.
* A separate solenoid valve fitted in the process vessel to pour out the liquid in to the bottle.
* All the components are fitted in an attractive powder coated frame.
* A Stepper motor with conveyor mechanism is provided to move the filled bottles.

Note

Totally 4 digital inputs & 9 digital outputs are available in this trainer so that user can perform experiments with optional versamax micro PLC for real time application.

6. PLC RTA - LEVEL CONTROL MODULE [VPAT - 06]

This module consists of a process tank fitted with a two level sensors, reservoir tank with miniature pump to establish ON/OFF control of a water tank.

* Transparent water tank to visualize the water level.
* A Reservoir tank fitted with miniature pump for water pumping
* Two high quality magnetic switches to detect 2 different levels of water tank.
* All components mounted on a neat elegant frame.
* One DC solenoid valve provided at the outlet of process tank for disturbance.

7. PLC RTA - MATERIAL HANDLING MODULE [VPAT - 07]

This module consists of all components to establish material handling systems of robotic control.

The details of this module is as follows :

* One 7Kg stepper motor is provided for arm movement.
* One stepper motor (7Kg) is provided for conveyor control.
* One proximity sensor to detect the presence of material.
* Two limit switches provided to control reverse bias or forward bias
* A Electromagnet provided in the arm to pick up the metal object.
* One timer belt is provided for conveyor mechanism.
* Total No. of I/Os : 3 digital inputs, 9 digital outputs are available in this trainer so that these I/Os can connected to the optional versamax micro PLC for realtime study..

8. PLC RTA - PNEUMATIC STAMPING MODULE [VPAT - 08]

This demonstration unit consists of all necessary pneumatic components, electronic sensors and signal conditioner boards to study the pneumatic application and Automation of stamping machine using a GE Fanuc PLC.

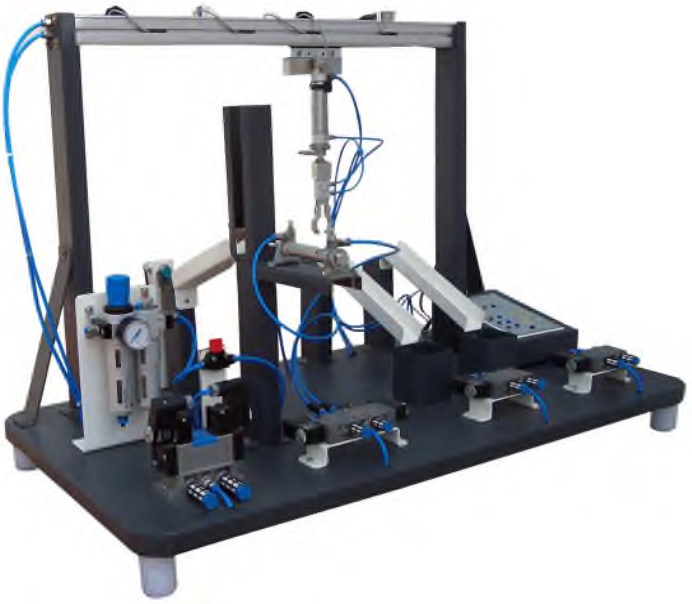
* Two inductive/capacitive sensors provided to sense the object presence of loading stamping unit
* Small square wooden block as a stamping job stacked vertically in a loading unit
* A double acting pneumatic cylinder fixed horizontally in the loading unit to push the job from the loading unit to the stamping table.
* 4nos of job holding provisions for continuous stamping.
* A sliding conveyor provided to slide the stamping job.
* A mechanical support to hold the job for stamping/stamping.

* A miniature stamp holder fixed in the tip of the double acting cylinder to punge stamping
* One pneumatic cylinder fixed horizontally to push the finished jobs from the stamping unit to the conveyor
* One roller based conveyor provided to load the finished jobs to the storage bin.
* All mechanical fixing are mounted in an attractive metal cabinet with logical diagram for student easy reference study.
* Built-in power supply.

9. PLC RTA - PNEUMATIC BATTERY TESTING MODULE [VPAT - 09]

This application trainer consists of pneumatic cylinders electronic signal sensors and mechanical accessories to automate the battery test monitoring system. In this trainer, PLC acts as a control unit and the ladder program controls the sequence of automation.

A pneumatic actuated gripper picks battery from the loaded tray and tested in the testing station, according to the material quality it is differentiated and fed to the conveyor to store in a storage bin.



* A transparent battery reservoir compartment of capacity 10 Nos.
* A double acting cylinder fixed horizontally to push the battery & load the battery to the testing station.
* A pneumatic arm plunger to pick up the battery to the testing station
* A limit switch provided to sense the position of arms
* One Inductive/ capacitive sensors provided to check the battery as a conductive/non conductive material at testing station.
* Two separate battery holder of capacity 5 nos. provided to store the tested batteries
* Two pair of test electrodes provided to check the holded battery voltage.
* All the mechanical components are mounted in an open metallic frame with mimic diagram.
* Built-in power supply.
* Cables provided to interface with the PLC.

10. PLC RTA - AC MOTOR SPEED CONTROL MODULE [VPAT - 10]

This trainer setup consists of AC motor speed sensor etc., to study the open and closed loop of AC Motor.

* One 230V AC Motor provided
* One Photo Electric Sensor provided to sense the speed of given motor
* Provision to select open and closed loop study
* Thyristor based power driver provided to drive the AC Motor
* Interface connectors provided to interface with PLC.
* Miniature illuminated rocker switch provided to power on the driver unit
* All the components are mounted on attractive frame with mimic diagram

11. PLC RTA - TEMPERATURE CONTROLLER MODULE [VPAT - 11]

This module consists of all necessary components to establish a closed loop speed control of temperature process. PLC acts as ON/OFF or PID controller. The details of this module is as follows

* One water bath with heater provided

* One AD-590 temperature sensor with the signal conditioner provided. Output: 0-10Volt.
* One Thyristor converter amplifier to provide 0-220 Volt pulsating DC to the heater coil so that linear control can be established.
  # Input: 0-10Volt,
  # Output: 0-220Volt
* One 3½ digit DPM to display the temperature of water bath.

*** Application:**

To study the temperature control using PLC
To study the closed loop control using PID mode by varying the proportional, integral, derivative gain in PLC.

12. PLC RTA - HYDRAULIC LINEAR ACTUATION MODULE [VPAT - 12]

This trainer is designed & fabricated to design and testing of fluid power circuit to control a double action Hydraulic cylinder for velocity, direction and force of the cylinder. Many hydraulic components are provided in this trainer to conduct many fluid power circuits related experiments.

This trainer consists of many components like one Hydraulic power pack for generating pressurized oil, One DC Valve, 2 Nos. of flow control valve for speed control of piston of the cylinder.

* One Powder coated Tank to house oil of 25 Lts-35 Lts with level indicator
* On the Top of the Tank all the hydraulic Components are mounted for easy access of components for conducting experiments.
* One AC motor with Hydraulic gear pump provided to pump the oil with high pressure.
* One manifold valve with DC solenoid valve for directional control provided to operate the 2 outlets of the manifold valve.
* The 2 outlets are connected to the hydraulic cylinder.
* DC solenoid valve can also be operated manually
* The input pressure of the inlet oil from the gear pump can be set manually.
* One check valve for non-return of oil
* One Relief valve for releasing extra oil pressure
* 2 Nos. of flow control valve provided to control the speed of Hydraulic cylinder manually.
* One Double acting Hydraulic cylinder with 40mm bore size,30mm Piston dia & 150mm stroke length
* One Limit switch provided to count the piston stroke and displayed in a counter

13. PLC RTA - RELAY TESTING MODULE [VPAT - 13]

This application trainer consists 4nos of relays LED's with connectors to demonstrate the relay characteristics.

* 4 nos of power relays provided.
  # Coil supply : 24VDC.
  # Contacts rating : 230AC/6Amps.
* LEDs provided to indicate the ON/OFF status.
* Integrated in a metal cabinet.
* Experiments to study
  i. Operating time, ii. Release time, iii. Contacts close/open.

14. PLC RTA - DIRECT - ON - LINE STARTER MODULE [VPAT - 14]

This PLC based Application trainer provides the facility of demonstrate the functioning of Direct on line starter using Relays. The ladder language programs are also provided to study the concepts of Electrical applications by PLC.

* 3 phase (R,Y,B) Phase Voltages are detected by voltage transformers with Ground isolation
* A current Transformer of 5 Amps provided to sense the current of the load for protection purposes.
* One optional 0.5HP AC Induction Motor for loading
* 3Nos. of Relay provided to actuate the 3 phase motor individually
* All the components are mounted in a powder coated metal platform.
* A ladder sample program provided in the user manual to control the DOL Starter.
* Terminals are connected in a banana connection.
* Hold in a mental cabinet with front panel.

15. PLC RTA - STAR - DELTA STATER MODULE [VPAT - 15]

This PLC based Application trainer provides the facility of demonstrating the functioning of Star Delta starter operation using Relays. The ladder language programs are also provided along with PLC to study the concepts of Electrical applications of PLC.

* 3 phase R,Y,B Phase Voltages are detected by voltage transformers with Ground isolation
* A current Transformer 5 Amps provided to sense the current of the load for protection
* One optional 0.5HP AC Induction Motor for loading.

* 3Nos. of Relay provided to actuate the 3 phase motor individually
* All the components are mounted in a powder coated metal platform.
* One stop/start button provided for operation.

16. PLC RTA - CAR PARKING MONITOR MODULE [VPAT - 16]

* One Demonstration panel provide to simulate the car parking area
* 3 sets of different color LEDs provided to indicate the status of the car parking
* 6 sensors provided to sense the presence of car
* All are mounted in one metal platform
* Sample Ladder program provided for experimental purpose
* One 2kg stepper motor provided to actuate the gate of car parking area

17. PLC RTA - LIFT CONTROL MODULE [VPAT - 20]

This trainer consist of 3 Floors lifts with a lead screw mechanism and LEDs and components to study the concepts of LIFT function Demonstration.

* A lead screw mechanism provided to move the up/down vertically.
* A 7Kg stepper motor provided to rotate the gear mechanism
* A MOSFET band stepper motor driver provided to drive the motor.
* 3 Nos of Demand Req. switch for to simulate the user request.
* 3 Nos of LES's to indicate the status of the lift.
* All are mounted in a metal cabinet with screen printing.
* Built in switched mode power supply.

SCADA TRAINER

SCADA TRAINER :

To study SCADA principle and its applications, we offer the most popular Supervisory control (SCADA) package "Cimplicity HMI" from GE Fanuc. This is very rich in feature and offers all drivers to interface with any PLC available in the market.

To study its full features we also offer various additional hardware, so that most of its features can be studied by practical experiments.

The SCADA Software can access data from any standard bus like Ethernet, Genius Bus, Profibus, Mod Bus etc. This trainer is configured with i). Cimplicity (SCADA Software) ii). Versa Max PLC iii).PIC based PLC trainer iv). Modbus based sensors using ADuC841

This trainer has the following features.

1. RS485 Multi drop cable
2. RS485 to RS232 converter
3. Mod Bus protocol
4. PIC Based PLC trainer which has
   - # Analog Input
   - # Analog output
   - # Timer Input
   - # Timer Output
5. Versa Max PLC.
6. Modbus based proximity switch using ADuC841 + Modbus.
7. Modbus based Temperature sensing ADuC841 + Modbus.
8. Modbus based graphical LCD using operator terminal.

The SCADA trainer is scalable i.e the hardware can be configured with a single modbus based sensor using ADuC8451 to a full featured hardware consist of Versamax PLC, PIC based PLC Trainer, Modbus based sensors etc.,

This SCADA Trainer can be mixed with commercial PLC like Versamax PLC with various types of PLC trainers manufactured by Vi Microsystems.

1. CIMPLICITY HMI: (SCADA SOFTWARE)

Cimplicity is the most powerful, supervisory monitoring, industrial automation and control software. It consolidates the collection of data from sensors and devices and then transforms the data into dynamic text, alarm and graphic displays.

Cimplicity HMI provides I/O count servers. I/O count is based on actual device points collected by the node. Virtual points are also available which reside in the computers memory.

Features:

* Development systems allow you to design, create and run new projects. Runtime systems allow you to run projects created by development systems.
* Cimplicity Workbench supports power tools. By clicking on a power tool, one can view the corresponding configuration items.
* CimEdit and Cim View provides package that makes system design, configuration and operation simple. CimEdit makes it easy to draw screens that accurately depute the process. It enables to import windows Metafile objects, plus ActiveX objects like Trending, SPC charts and Alarm viewers.
* OLE and ActiveX Objects such as Excel, Spread Sheets and Charts, Bitmaps, Video Clips and Sound files can also be included.
* Database Logger : Cimplicity Database Logger uses the standard ODBC interface to log data, such as alarms, events and point values to Microsoft Access Database files etc. One can later retrieve this stored information for reports and a variety of applications.
* Basic control engine allows for Visual Basic style language scripting and programming capabilities.

2) VersaMax Micro PLC with Demo panel - 1 No.

PLC SPECIFICATION

* Based on GE Fanuc PLC Model: Versamax Micro PLC 23 Points
* Power supply : 230V ±10% AC/50 Hz
* 2 Analog inputs (12 bit resolution) with programmable and calibration facility for processing the transducers of 0-10V/ 4-20mA/ 0-20mA.
* 1 Analog output (12 Bit resolution) 0-10V/4-20mA/0-20mA
* 13 Digital inputs (24V DC IN)
* 9 Digital outputs (Relay out)
* One digital out (24V DC Out)
* One constant 24V DC source.
* Memory 9K bytes with battery backup.
* The PLC have status indication for Knowing the I/O status, and has the self diagnostic features.
* One RS232C Interface for communication with PC
* One RS485 Interface for many applications.
* Built in high speed counter (HSC) function that can be configured as four type A counter and or as one type B counter and one type A counter.
* Provision to expand upto 84 I/O.
* Powerful instruction like PID, floating point math, sub routines, several read/write commands.

DEMONSTRATION PANEL

This demonstration unit houses the PLC & all necessary connector facilities to physically interconnect by patch chords and demonstrate the versamax micro PLC

* SPDT Switch (13 Nos) to demonstrate relay inputs
* LED lamps (10 Nos) for demonstrating relay outputs
* One analog voltage input feeding facility
* One analog current input feeding facility
* One 3½ Digit Digital display for voltage display
* One 3½ digit Digital Display for current (0-20mA) display
* All inputs/outputs are terminated on the panel on socket type connector for easy interconnecting of applications.

3. PIC BASED PLC TRAINER

This powerful trainer is designed to teach the students the basics of programmable logic controller (both hardware and software). The hardware consists of PIC Micro controller, Inputs/outputs like AI, AO, DI & DO, counter/timer, PWM etc. The software learning package offers full exposure in all software related to PLC & SCADA. No body else offers these feature in the market. Even Field bus like MODBUS can be ported to this trainer.

PLC Specifications:

* PIC18F8720 based RISC architecture
* Clock Frequency : 40MHz
* Single +5V Operation
* Onchip 128K bytes Flash program memory
* Onchip 3840 bytes data memory
* Onchip 1034 bytes of EEPROM
* 1M Bytes external Data memory

Discrete I/O :

* 8 bit opto isolated digital outputs
* 8 bit opto isolated digital inputs
* 10 bit, 16 Channel Analog inputs
* 8 bit, 2 channel Analog outputs
* 10 bit 2 channel PWM outputs

Demonstration Panel:

* 8 Nos. of SPDT switches to demonstrate digital inputs
* 8 Nos. of LED lamps for Simulating digital outputs
* 8 Channel Analog Inputs
* 2 Channel Analog O/P (Voltage) (0-5V) (can be configured to connect ADC input)
* 3½ Digit Display for ±20 Volt FSD
* Many example Programs provided with detailed documentation
* The above hardware are mounted in a powder coated cabinet with connector provision for interface.
* Digital Inputs & Outputs are terminated at socket connectors
* Analog I/O & PWM are terminated at socket connectors.

Serial Communication :

* One serial port compatible for RS232 & RS485
* MODBUS protocol can be optionally configured.

Learning Software Package:

* A Ladder program software (Limited version) written in V Basic is provided to the students with complete listing such that the student can further develop it to more powerful ladder software.
* A separate window based ladder diagram program for 4 pages will be provided
* Animation of input & output can be seen in the GUI Screen.

4. Modbus Based Proximity Switch Module

* ADμC841 embedded controller board.
* Modbus protocol Implemented
* One proximity Switch

5. Modbus Based RTD Module

* ADμC 841 Based Controller board.
* Modbus protocol Implemented
* One RTD Sensor Provided for Temperature measurement

6. Modbus based Graphical LCD Operator Control Station

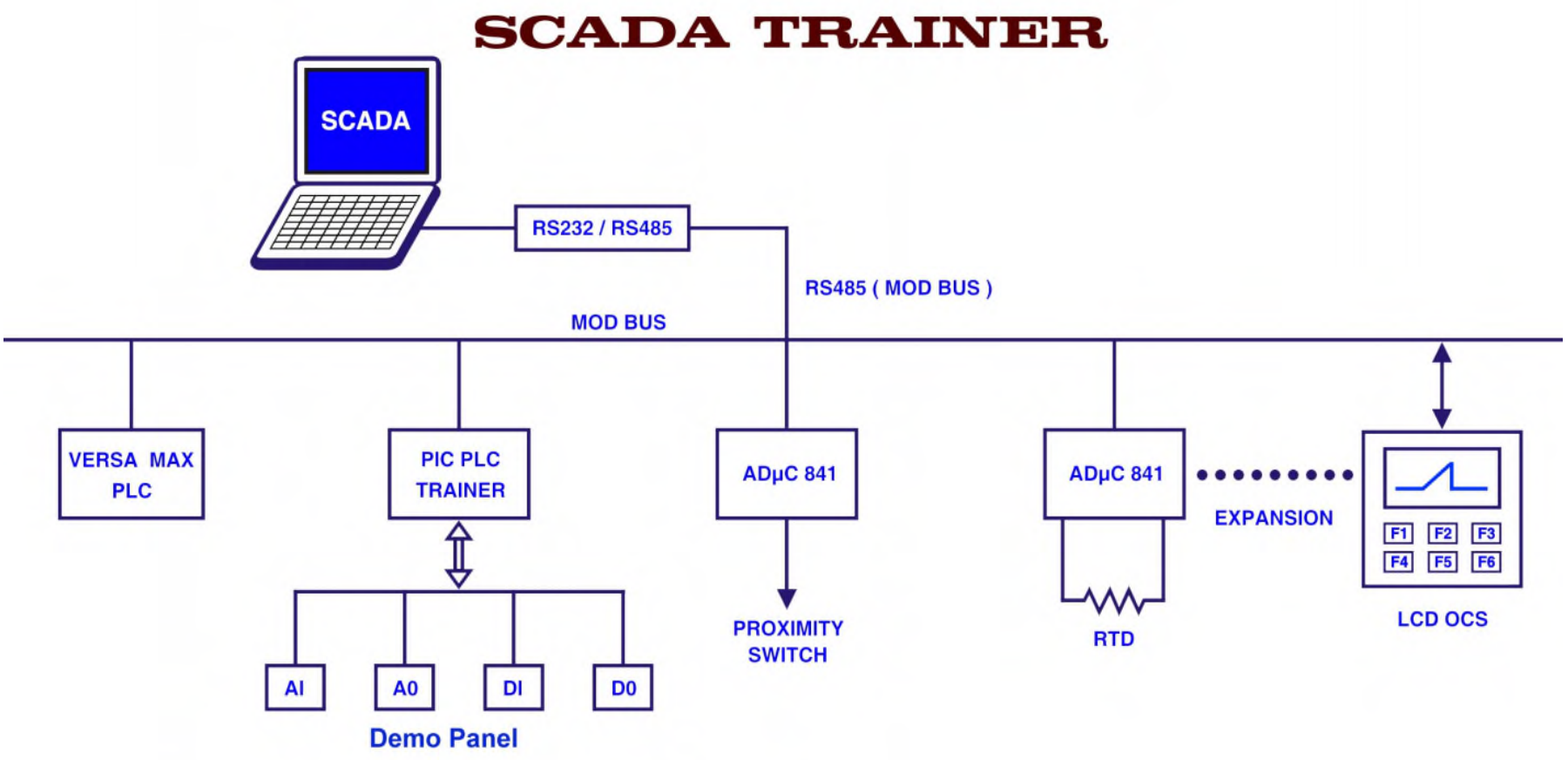
* Monochrome graphical LCD
* 240 × 128 Pixel Resolution
* 6 Functional Keys
* ADuC841 Embedded Controller board
* RS232 / RS485 Interface

Deliverable for Single Configuration

S.No	Description	Quantity
1	Cimplicity HMI	1 No
2	Modbus based proximity switch	1 No
3	RS 232C Cable	1 No
4	IBM PC Pentium Computer	Provided by the college

Deliverable for Full featured configuration

S.No	Description	Quantity
1	Cimplicity HMI	1 No
2	Versa max PLC	1 No
3	RS 232C Converter	1 No
4	RS485 Multidrop Cable	1 No
5	PIC based PLC trainer	1 No
6	Modbus Based proximity Switch Module	1 No
7	Modbus Based RTD Module	1 No
8	IBM PC Pentium Computer	Provided by the college


SCADA TRAINER
SCADA
RS232 / RS485
RS485 (MOD BUS)
MOD BUS
VERSA MAX PLC
PIC PLC TRAINER
ADµC 841
ADµC 841
EXPANSION
F1
F2
F3
F4
F5
F6
LCD OCS
PROXIMITY SWITCH
RTD
AI
A0
DI
D0
Demo Panel